CLAIMS

1. A zoom lens comprising, in order from an object side, a first lens unit of positive optical power, a second lens unit of negative optical power, a third lens unit of positive optical power, and a fourth lens unit of positive optical power, wherein,

when zooming from a wide-angle end to a telephoto end, the first lens unit and the second lens unit move so as to trace a convex path toward an image side, and the third lens unit and the fourth lens unit move monotonously toward an object side.

2. The zoom lens according to claim 1 comprising a diaphragm on the object side of the third lens unit.

3. The zoom lens according to claim 1, wherein the first lens unit includes either a single positive lens element or a cemented lens including a set of a negative lens element and a positive lens element.

4. The zoom lens according to claim 1, wherein, when in a state of focusing at infinity, a focal length of an entire lens system at the wide-angle end is f_W, a focal length of the first lens unit is f_{G1}, and a magnification change ratio between the wide-angle end and the telephoto end is Z, condition (1) is satisfied:

$$0.1<f_W/f_{G1}<0.3$$

(where Z>4.5) .....(1).

5. The zoom lens according to claim 1, wherein, when in a state of focusing at infinity, a focal length of the entire lens system at the wide-angle end is f_W, a focal length of the fourth lens unit is f_{G4}, and a magnification change ratio between the wide-angle end and the telephoto end is Z, condition (2) is satisfied:

$$0.25<f_W/f_{G4}<0.35$$

(where Z>4.5) .....(2).

6. The zoom lens according to claim 1, wherein, when in a state of focusing at infinity, a magnification change ratio between the wide-angle end and the telephoto end is Z, a thickness of an i-th lens unit (where i is an integer) is d_i, and a total thickness of the lens units is d_{si}, condition (3) is satisfied:

$$3<d_{si}/Z<5$$

(where Z>4.5) .....(3).

7. The zoom lens according to claim 1, wherein a single lens element of positive optical power in the fourth lens unit includes a bi-convex lens.

8. The zoom lens according to claim 1, wherein a lens

element closest to the object side in the third lens unit includes a lens of positive optical power, and an image-side surface of the lens is flat or concave.

9. The zoom lens according to claim 1, wherein a cemented lens element is included in the third lens unit.

10. The zoom lens according to claim 1, wherein the third lens unit is moved in a direction perpendicular to an optical axis to allow compensation for a movement of an image caused by a vibration of the zoom lens.

11. An imaging device capable of converting and outputting an optical image of a subject as an electrical image signal, the imaging device comprising:

a zoom lens for forming the optical image of the subject so as to be zoomable; and

an imaging element for converting the optical image of the subject formed by the zoom lens into the electrical signal,

the zoom lens including, in order from an object side, a first lens unit of positive optical power, a second lens unit of negative optical power, a third lens unit of positive optical power, and a fourth lens unit of positive optical power, wherein

when zooming from a wide-angle end to a telephoto end, the first lens unit and the second lens unit move so as to trace a

convex path toward an image side, and the third lens unit and the fourth lens unit move monotonously toward the object side.

12. The imaging device according to claim 11, wherein a diaphragm is provided on the object side of the third lens unit.

13. The imaging device according to claim 11, wherein the first lens unit includes either a single positive lens element or a cemented lens including a set of a negative lens element and a positive lens element.

14. The imaging device according to claim 11, wherein, when in a state of focusing at infinity, a focal length of an entire lens system at the wide-angle end is f_W, a focal length of the first lens unit is f_{G1}, and a magnification change ratio between the wide-angle end and the telephoto end is Z, condition (1) is satisfied:

$$0.1<f_W/f_{G1}<0.3$$

(where Z>4.5) .....(1).

15. The imaging device according to claim 11, wherein whe in a state of focusing at infinity, a focal length of the entire lens system at the wide-angle end is f_W, a focal length of the fourth lens unit is f_{G4}, and a magnification change ratio between the wide-angle end and the telephoto end is Z, condition (2) is

satisfied:

$$0.25<f_W/f_{G4}<0.35$$

(where Z>4.5) .....(2).

16. The imaging device according to claim 11, wherein, when in a state of focusing at infinity, a magnification change ratio between the wide-angle end and the telephoto end is Z, a thickness of an i-th lens unit (where i is an integer) is d_i, and a total thickness of the lens units is d_{si}, condition (3) is satisfied:

$$3<d_{si}/Z<5$$

(where Z>4.5) .....(3).

17. The imaging device according to claim 11, wherein a single lens element of positive optical power in the fourth lens unit includes a bi-convex lens.

18. The imaging device according to claim 11, wherein a lens element closest to the object side in the third lens unit includes a lens of positive optical power, and an image-side surface of the lens is flat or concave.

19. The imaging device according to claim 11, wherein a cemented lens element is included in the third lens unit.

20. The imaging device according to claim 11, wherein the

third lens unit is moved in a direction perpendicular to an optical axis so as to allow compensation for a movement of an image caused by a vibration of the zoom lens.

21. A camera capable of capturing an image of a subject and outputting the image as an electrical signal, the camera comprising

an imaging device including a zoom lens for forming an optical image of the subject so as to be zoomable, and an imaging element for converting the optical image of the subject formed by the zoom lens into the electrical signal,

the zoom lens including, in order from an object side, a first lens unit of positive optical power, a second lens unit of negative optical power, a third lens unit of positive optical power, and a fourth lens unit of positive optical power, wherein

when zooming from a wide-angle end to a telephoto end, the first lens unit and the second lens unit move so as to trace a convex path toward an image side, and the third lens unit and the fourth lens unit move monotonously toward an object side.

22. The camera according to claim 21 being a digital still camera capable of obtaining a still image of the subject.

23. The camera according to claim 21 being a digital video camera capable of obtaining a moving picture of the subject.